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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,529	10/27/2002	Sezen Uysal	PAX-110	2149

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EXAMINER
PRIETO, BEATRIZ

ART UNIT	PAPER NUMBER
2142	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)
	10/065,529	UYSAL, SEZEN
	Examiner	Art Unit
	Prieto B.	2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 October 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/01/06 has been entered. Claims 1-41 remain pending.

2. Regarding claim terminology/interpretation for the purposes of examination: (i) claimed "DNS messages", have been broadly interpreted as the DNS message, as known in the art. Pertinent prior art has been made of record that exemplified the format and/or structure of a DNS message. The "optimum server within the network service" in claim 1 for the purposes of examination has been broadly interpreted as a server that provides the network service associated with the captured packets.

3. Claim 31 previously objected for lack antecedent basis has been obviated via the above-mentioned amendment and is hereby withdrawn.

Substance of

Claim Rejection under 35 USC §103

6. Quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

7. Claims 1-13, 15-27, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alteon in view of He and as further exemplified by Mockapetris in RFC 1035, DOMAIN NAMES-IMPLEMENTATION AND SPECIFICATION, Mockapetris, ISI, Nov 1987.

Regarding the apparatus claim 1 and the method claim 17, Alteon teaches an apparatus (e.g. node shown of Figs. 1-5) comprising:

an ISPs PoP/web switch (processor) with at least two network interfaces comprising switch ports (p. 8 or front-end processor on p. 11) interconnecting via a data path subscribers computers to the Internet and to DNS servers as shown e.g. on Fig. 1 (p. 2), the ISPs Pop/web switch comprising instructions that

when executed by a processing implement the functions performed by the ISP PoP/web switch, functions including;

examines "analyzes "intercepted "captures" data packets through the network interfaces (p. 2) including processor-intensive packet examination (p. 12 including RISC processors of Fig. 9);

manipulate (modify) packets (p. 3) including processor-intensive packet examination (p. 12 including RISC processors of Fig. 9); and

direct the user to the optimum server (p.13); although Alteon teaches manipulating the packets according to the user's location to direct the user to server, he does not explicitly teach that the server is an "optimum server" location for providing the network service.

He teaches a manipulating to reflect (modifying) the response to reflect the optimum server selection (left column p. 1172), a selector having routing functions and a server making use of DNS (right column p. 1170);

the selector selects for a user's DNS request through DNS redirection the best (optimum) server (p. right column 1170); specifically,

selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the best is select based on the relativity between the geographical locations between the servers and the user, where the server closest to the user is selected (right column, p. 1171); the optimum server is determined based on the geographical location of the servers to the user (left column, p. 1171); and returning the address in said reply to the user (left column, p. 1172) by manipulating to reflect (modifying) the response to reflect the optimum server selection informed to the user (left column p. 1172).

It would have been obvious to one of ordinary skill in the art at the time the invention was made given the teachings of Alteon for redirecting traffic in a client-server environment, the teachings of He would readily apparent. One of ordinary skill would be motivated to given the suggestion of configure a node having routing functions to operate making isolate the subscriber's DNS server configuration configuring the server to capture all DNS service request and configured to direct traffic to a specific site close to the user, to utilize the teachings of He, including the functions disclosed in the routing component, because in doing so, the node can be configured to take in account other dynamic factors beside the closest server which can be combined to include network traffic conditions and fault tolerant reliability measures as suggested by He.

However, although the above-mentioned prior art teaches modifying the DNS message according to the user's geo-location to direct the user to the optimum server within the network service, the do not explicitly disclose the particular section of the DNS message, namely, the question and answer section.

Mockapetris disclose the format and structure of a DNS message. Specifically, disclosing that All communications inside of the domain protocol are carried in a single format called a message. The top level format of message is divided into 5 sections (some of which are empty in certain cases) shown below: a Header, a Question which carries the question for the name server, an Answer which holds the resource record (RRs) answering the question, the header section is always present. The header includes fields that specify which of the remaining sections are present, and also specify whether the message is a query or a response, a standard query or some other opcode, etc. The names of the sections after the header are derived from their use in standard queries. The question and answer sections are described as:

The question section contains fields that describe a question to a name server. These fields are a query type (QTYPE), a query class (QCLASS), and a query domain name (QNAME). The Question section includes a QTYPE and QCLASS values field of the query and include a " * " request for all records (section 3.2.4 and 3.2.5 on p. 13). The question section is used to carry the "question" in most queries, i.e., the parameters that define what is being asked. The section contains QDCOUNT entries, each of the format shown on section 4.1.2, where QNAME-a domain name represented as a sequence of labels, where each label consists of a length octet followed by that number of octets. QTYPE-a two-octet code, which specifies the type of the query. The values for this field include all codes valid for a TYPE field, together with some more general codes, which can match more than one type of RR. The QCLASS-a two-octet code that specifies the class of the query. For example, the QCLASS field is IN for the Internet (section 4.1.2 on p. 28-29).

The answer section contains RRs that answer the question and it has a resource record(s) (RRs) format(section 4.1 on p. 25). The answer having a format (shown on p. 29) holds a variable number of resource records i.e. a number according to "ancount" of the header section format (section 4.1.1 on p. 26) indicating the number of resource records in the answer section (section 4.1.3 on p. 29). The answer section has a RRs format have the same top-level format shown on section 3.2.1. on page 11, comprising: a NAME-an owner name, i.e., the name of the node to which this resource record pertains; TYPE-two octets containing one of the RR TYPE codes. CLASS-two octets containing one of the RR CLASS codes; a RDLENGTH-an unsigned 16 bit integer that specifies the length in octets of the RDATA field (section 3.2.1 on p. 11) and a RDATA-a variable length string of octets that describes the resource which varies according to the TYPE and CLASS of the resource record. The TYPE values fields are used in resource

records and are a subset of QTYPEs, some types are: A- a host address, NS-an authoritative name server, CNAME-the canonical name for an alias and a PTR-a domain name pointer (section 3.2.1 on page 12). In the RDATA field of the answer section NSDNAME-a domain-name which specifies a host, which should be authoritative for the specified class and domain. For example, hosts, which are name servers for either Internet (IN) class information, are normally queried using IN class protocols (section 3.3.11 on page 18). In the answer section the Internet specific resource record(s) (RRs) Having a format shown on section 3.4.1, comprises an address, namely and a 32 bit Internet address, where hosts that have multiple Internet addresses will have multiple A records in decimal notation (section 3.4 on p. 20-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made given the teachings of Alteon and HE for modifying the DNS request to request an IP address of a server that provides the requested service, and that is located at an optimal geographic location with respect the user associated with the DNS request including manipulating to reflect (modifying) the response to reflect the optimum server selection which selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the server closest to the user. The discloses of Mockapetris setting for the message format of a DNS request-response message would have been readily apparent. At the time the invention was made Mockapetris exemplifies that the DNS message used for all domain name protocol communication carried in a single format called a message having a question and answer section. It would have been obvious to one of ordinary skill in the art at the time the invention was made that when the Alteon reference discussed examining each packet to determine which are DNS request the process was examining the header of the disclosed DNS message format which comprises an header section always present and that includes fields that specify which of the remaining sections are present, and also specify whether the message is a query or a response, as disclosed by Mockapetris. One would have been motivated to utilize this DNS message format because it used for all domain name protocol communication making the DNS request-response usable in existing domain name servers. Thus, the modified DNS message of the applied Alteon-He system would have the question and answer format and content of the DNS message exemplified by Mockapetris, namely, a question section contains fields that describe a question (e.g. the query domain name) to a name server and the answer section because it contains resource record (RRs) that answer the question, namely, the resource record(s) comprising, the host address or authoritative/canonical name server, for the Internet (IN) class information queried using IN class protocols, for example. Thus, the modified (set, add, or delete) the DNS message of the applied references contains a question section, namely, to request an IP address of a server that provides the requested service, and that is located at an optimal geographic

location with respect the user associated with the DNS request including manipulating the answer section to reflect (modifying) the response to reflect the optimum server selection which selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the server (e.g. host address or authoritative/canonical name server in the resource record format of the answer section) closest to the user.

Regarding claim 2, the optimum location is the geographically the closest one (Alteon: p. 4 and 13).

Regarding claims 3-4, wherein the optimum location is that of geographically the closest server which has been determined serving user's request "healthy and actively serving" as those that "timely and correctly" response to users request (Alteon: p. 2, 6 and 8).

Regarding claims 5-6, a preferred location chosen by a human operating the ISP (Alteon: p. 5) and the location of a network service is one of the locations of many mirrored sites (servers) that are connected via a network (Alteon: p. 5).

Regarding claims 7-8, wherein a network service is an Internet network service and wherein a network service is an enterprise network service (Alteon, Figs. 1-5).

Regarding claim 9, the optimum process selection is made by a set of rules to the selection process (He: selection criteria, p. 1171).

Regarding claim 10, this method claim corresponds to the apparatus claim 1, discussed above, same rationale of rejection is applicable.

Regarding claim 11, wherein "transparently" altering DNS messages is to capture and to modify the content of the DNS messages (He: left column, p. 1172), the node configured to operating at OSI model's second layer, the user is not aware of the operations occurring on said network node (Alteon: p. 11).

Regarding claim 12, the network node is a device (e.g. a switch) attached to networks, captures every packet detected on any of it interfaces via at least two network interface switch ports (Alteon: p. 8

interconnecting via a data path subscribers computers to the Internet and to DNS servers as shown e.g. on Fig. 1, p. 2).

Regarding claim 13, examine the packet, using layer-2 (Media Access Control (MAC) addresses and Layer-3 (IP addresses) (Alteon: p. 2).

8. Claims 14 and 28 are rejected under 103(a) as being unpatentable over Alteon-He, as applied to claim 1, in view of Mockapetris in further view of Macpherson et. al. US 6,845,400 (Macpherson hereafter).

Regarding apparatus claims 14 and method claim 28, wherein the network node determines the source IP address of the captured DNS message and consults its previously built database to determine the geographical location of the user that has sent the DNS message.

Macpherson teaches the use of a table with user location information, where the user's location is derived from the content of the user's request in conjunction with the database(s) comprising a mapping between the IP address to the location. Upon user's request the table is interrogated to retrieve the user's location.

It would have been obvious to one of ordinary skilled in the art at the time the invention was made given the suggestion of Alteon for providing services based on the user location, the teachings of Macpherson for accessing location based Internet services would have been readily apparent. One would be motivated to combine the teaching of Macpherson with Alteon because in doing so the methods makes use both of information already readily available and of the existing infrastructure to provide location-based services and the method may be implemented without active user initiation.

Regarding claim 15, wherein the network node modifies the captured DNS messages according to the geo-location of the DNS user to inform the user with the IP address of the optimum server (He: manipulating to reflect (modifying) the response to reflect the optimum server selection informed to the user, left column p. 1172).

Regarding claim 16, the network node forwards every packet, which is not a DNS message to the other interface (Alteon: p. 2).

Claim 16 discussed above.

Regarding claims 18-30, these claims are the same as claims 2-10 and 13-16, same rationale of rejection is applicable.

9. Claims 31-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alteon-He as applied in claim 1, in view of Mockapetris in further view of Parekh et. al. (US 6,757,740) (referred to as Parekh hereafter).

Regarding claim 31, comprises similar limitation as discussed on claim 1, same rationale of rejection is applicable. Further limitation(s) include at least two servers at different locations (called "geographically different") in the network, e.g. portals that support mirror sites across the country or world, using a plurality of distributed DNS servers for locating close-by mirror sites (Alteon p. 4) using the DNS server to access servers on the Internet by resolving the Internet hostnames to IP addresses (p. 6);

at least one DNS server (Alteon Figs. 2-3 and p. 1) from the plurality of distributed DNS servers; and a device "hardware appliance" (Alteon: ISPs PoP of Fig. 1) configured to

analyzing all DNS requests directed to a particular DNS server (Alteon p. 2) including intercepting all DNS request (Alteon p. 3),

determines the geographically closest server providing the service requested by the user (Alteon p. 5), directs the user to the closest site from mirrored content providing the network service (p. 13) by mirrored servers that are connected via a network (p. 4);

also modifying the DNS response from the server (Alteon: p. 3 and Fig. 2), and

modifies the DNS to provides/returns to the user the IP address of the best server (He: p. 1169), the best server being selected based on a variety of factors including the geographical location of the server to the user (He: p. 1171), the best server being the geographically closest server that provides the requested service (He, p. 1171), the best server selected is returned in a DNS rely to the user by manipulating the DSN reply message (He: p. 1172);

wherein the hardware appliance is located between the particular DNS server and the network "backbone" (Alteon: Fig. 3); however the above-mentioned prior art does not explicitly disclose the use of stored information associating geographical locations with IP addresses.

Parekh teaches a method 100 of operation for a system 10 including at least a database of IP addresses and the respective geographical locations associated with those IP addresses (column 3, lines 2-

31, 38-41, 43-46), specifically, determining and collecting the determined actual geographic location associated with IP addresses (column 4, lines 46-67) and storing in a location database (20 of Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Parekh for delivering information based on geographical locations as well as network conditions because in doing so it will overcome the prior art deficiency noted by Parekh of no association or link between the IP address or domain name and current referencing to the extensions of domain names for determining location which can be deceiving and inaccurate. One would be motivated to enable Alteon's system with a data the stored geographical locations of any host including the intermediate host from one host to another storing this information either in a central database or local, where the geographic location information may be used as indicated by Parekh in the routing of Internet traffic and route Internet visitors to the closest web server from among a plurality of web servers using any systems or methods to determine the geographic location or provide further information that will help in ascertain the geographic location of an IP address, as suggested by Parekh.

Regarding claim 32, wherein the hardware appliance determines the geographically closest server by consulting the database (Parekh: column 5, lines 42-column 6, line 6)

Regarding claim 33, modifies a general DNS request for a server providing a desired service by re-writing the request to request a specific geographically located server that provides the desired service (Alteon: right side of figure 2 of page 3, right side of Figure 3 on page 4, and page 12), and modifies the DNS response to match the original general DNS request (Alteon Fig. 2).

Regarding claims 34-36, the hardware appliance is located between a DNS server and a network backbone (Alteon Fig. 4); wherein the system comprising multiple hardware appliances (Alteon p. 1); wherein each DNS server has associated with it a hardware appliance (Alteon: p. 1-2).

Regarding claim 37, identifying the geographical location of a server serving the user (Parekh (column 3, lines 2-31, 38-41, 43-46); and modifying the DNS request to request an IP address of a server that provides the requested service, and that is located at an optimal geographic location with respect the user associated with the DNS request (Alteon: right side of figure 2 of page 3, right side of Figure 3 on page 4, and page 12, He: manipulating to reflect (modifying) the response to reflect the optimum server selection, see left column p. 1172, selects for a user's DNS request through DNS redirection the best "optimum"

server, see p. right column 1170; selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the server closest to the user, see right column, p. 1171).

Regarding claim 38, modifying a DNS response to match the original DNS request (Alteon: Fig. 2).

Regarding claim 39, receiving from a host an IP address for a specific server at a specific geo-location and correlating that IP address with a general request from a user for the IP address of a server providing the requested service (Parekh: column 5, lines 42-column 6, line 6) and modifying the DNS server response to match the general request (Alteon Fig. 2).

Regarding claim 40, receiving a DNS request from a user (Alteon Figs. 2-3); determining the geographical location of the user by determining the geographical location of the server used by the user (Parekh: (Parekh: column 5, lines 42-column 6, line 6); and altering the DNS request from the user from a general request for an IP address of a server providing a desired service to a specific request for a server at a specific location (Alteon: right side of figure 2 of page 3, right side of Figure 3 on page 4, and page 12, He: manipulating to reflect (modifying) the response to reflect the optimum server selection, see left column p. 1172, selects for a user's DNS request through DNS redirection the best "optimum" server, see p. right column 1170, selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the server closest to the user, see right column, p. 1171).

Regarding claim 41, configuring the hardware appliance with the code executable on a processor for performing the functions recited above (Alteon, p. 12-13).

7. Claims 1-13, 15-27, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alteon in view of He and as further exemplified by Shaikh, A., On the effectiveness of DNS based server selection, INFOCOM 2001, vol. 3, ISBN 0-7803-7016-3, p. 1801-1810.

Regarding claims 1, and 17, Regarding the apparatus claim 1 and the method claim 17, Alteon teaches an apparatus (e.g. node shown of Figs. 1-5) comprising:

an ISPs PoP/web switch (processor) with at least two network interfaces comprising switch ports (p. 8 or front-end processor on p. 11) interconnecting via a data path subscribers computers to the Internet and to DNS servers as shown e.g. on Fig. 1 (p. 2), the ISPs Pop/web switch comprising instructions that when executed by a processing implement the functions performed by the ISP PoP/web switch, functions including;

examines "analyzes "intercepted "captures" data packets through the network interfaces (p. 2) including processor-intensive packet examination (p. 12 including RISC processors of Fig. 9);

manipulate (modify) packets (p. 3) including processor-intensive packet examination (p. 12 including RISC processors of Fig. 9); and

direct the user to the optimum server (p.13); although Alteon teaches manipulating the packets according to the user's location to direct the user to server, he does not explicitly teach that the server is an "optimum server" location for providing the network service.

He teaches a manipulating to reflect (modifying) the response to reflect the optimum server selection (left column p. 1172), a selector having routing functions and a server making use of DNS (right column p. 1170);

the selector selects for a user's DNS request through DNS redirection the best (optimum) server (p. right column 1170); specifically,

selects the best "optimum" location of a network service on the Internet according to the user's geo-location, that is the best is select based on the relativity between the geographical locations between the servers and the user, where the server closest to the user is selected (right column, p. 1171); the optimum server is determined based on the geographical location of the servers to the user (left column, p. 1171); and returning the address in said reply to the user (left column, p. 1172) by manipulating to reflect (modifying) the response to reflect the optimum server selection informed to the user (left column p. 1172).

It would have been obvious to one of ordinary skill in the art at the time the invention was made given the teachings of Alteon for redirecting traffic in a client-server environment, the teachings of He

would readily apparent. One of ordinary skill would be motivated to given the suggestion of configure a node having routing functions to operate making isolate the subscriber's DNS server configuration configuring the server to capture all DNS service request and configured to direct traffic to a specific site close to the user, to utilize the teachings of He, including the functions disclosed in the routing component, because in doing so, the node can be configured to take in account other dynamic factors beside the closest server which can be combined to include network traffic conditions and fault tolerant reliability measures as suggested by He.

However, although the above-mentioned prior art teaches modifying the DNS message according to the user's geo-location to direct the user to the optimum server within the network service, the do not explicitly disclose the particular section of the DNS message, namely, the question and answer section.

Shaikh, A., et. al. suggeste modifying the DNS protocol to carry additional information to identify the actual client making the request, where in Figure 6(a), the standard DNS message format consists of five sections: header, question, answer, authority, and additional. Shaikh disclosed scheme could be implemented by modifying the format of the question section in DNS messages, to include the IP address of the client requesting name resolution in the DNS query message (p. 1809).

It would have been obvious at the time the invention was made to include the teachigs of Shaikh in the Alteon-He system for to enable the DNS server to perform load balanging or server selection using the client IP address to decide more accurately which host server providing the requested service is to be returned in the answer section. It would have been obvious to one of ordinary skill to modify the answer section of the DNS message format which contains the resource records that answer the question (i.e. match) having a resource record(s) (RRs) format, as known in the art and having the a variable number of resource records according to "ancount" field of the header section format indicating the number of resource records in the answer section. One would be motivated to modify the answer section with the name of the name of the node to which this resource record pertains including values fields are used in resource records and are a subset of QTYPEs, some types are: A- a host address, NS-an authoritative name server, CNAME-the canonical name, as known in the art, for the requested services.

Citation of Pertinent Art:

10. The following prior art made of record and not relied upon are considered pertinent to applicant's disclosure. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

Cisco Distributed Director, Delgadillo, K., Cisco IOS Product Marketing, 1999, p. 1-19.

Cisco teaches transparently redirecting end-user service request to the closest server as determined by the client-server topological proximity, redirecting the client to the topological closest server, wherein an DNS response directs the client to the predetermined "best" server. Specifically, a question and answer section comprising TYPE value a MX – mail exchange, where the **answer section** comprises a resource record of the MX type and the question comprises an MAILLB QTYPE value in the **question section** part of the query. Cisco discloses Distributed Director can be used to redirect client email requests to the "best" SMTP server via a single DNS MX Resource Record. With this feature, the Distributed Director can generate and issue to the requester a single DNS MX resource record that identifies the "best" available SMTP server. (see p. 9) 7. A DNS "NS" (Name Server) resource record **(i.e. an answer section format)** which identifies an authoritative DNS server for a given domain name. A DNS "A" (Address) resource record binds a domain or server name to an IP address (p. 10). The Distributed Director returns to the client's local DNS a single IP address (a single DNS "A" Resource Record) or a single DNS "MX" Resource Record corresponding to the "best" server.(p. 12).

On the effectiveness of DNS based server selection, Shaikh, A., et. al., INFOCOM 2001, vol. 3, ISBN 0-7803-7016-3, p. 1801-1810.

Shaikh, A., et. al. teaches modifing the DNS protocol to carry additional information to identify the actual client making the request. As shown in Figure 6(a), the standard DNS message format consists of five sections: header, **question, answer**, authority, and additional [4]. This scheme could be implemented by **modifying the format of the question section in DNS messages,**

Response to Arguments

7. Regarding claims 1-13, 15-27, and 29-30 are rejected as being unpatentable over Alteon in view of He it is argued that the applied references do not teach added limitation, namely, modifying the question, answer section and/or both.

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Thursday from 5:30 to 2:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see http://pair-direct.uspto.gov or the Electronic Business Center at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
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